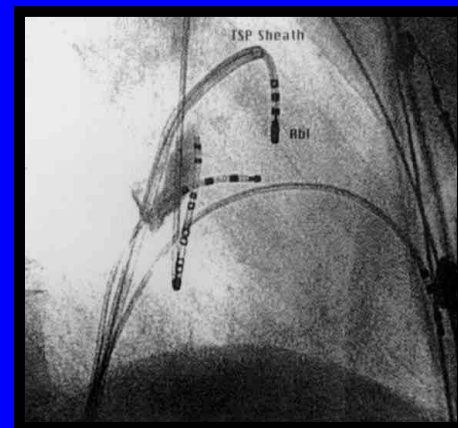
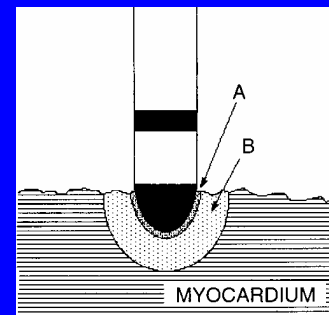


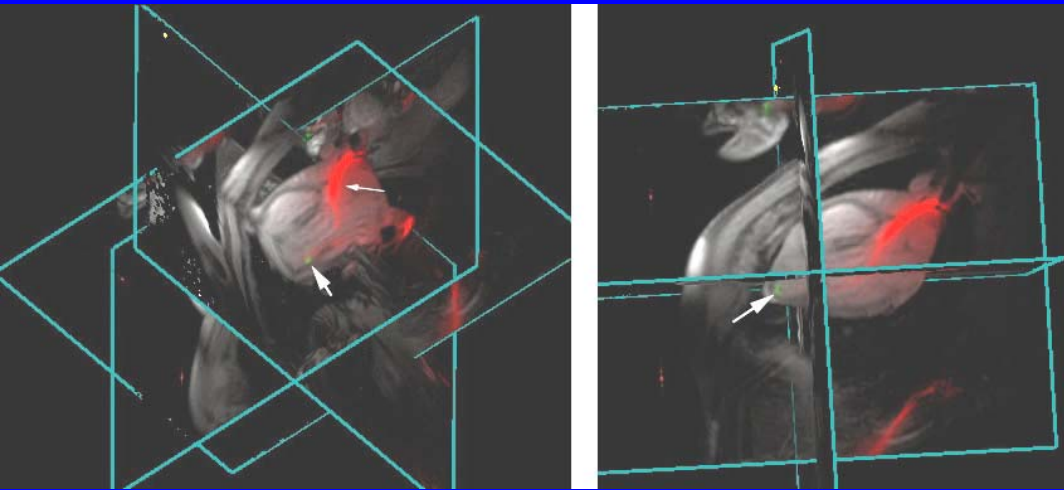
Magnetic Resonance Guided Electrophysiology Intervention

NHLBI (PI: Henry Halperin, MD, MA)

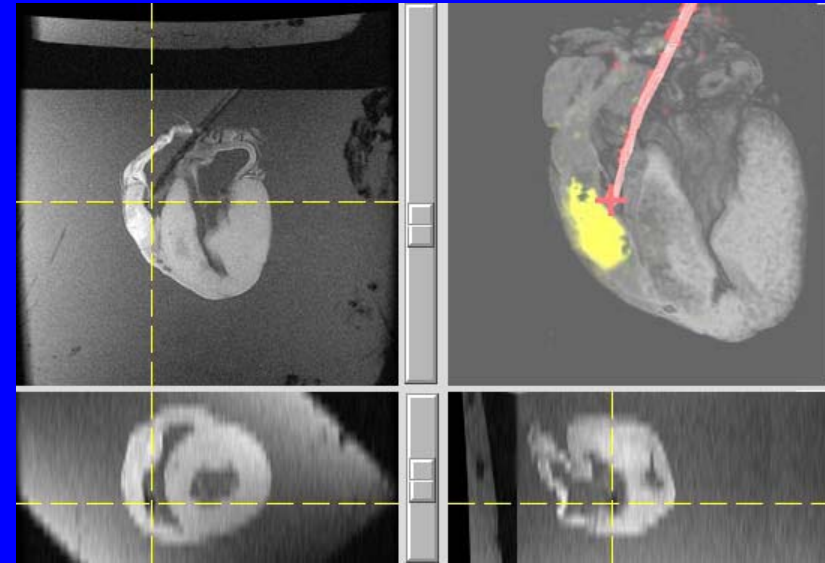
- Background
 - Catheter ablation can cure many tachycardias.
 - Procedures currently use X-ray fluoroscopy.
 - Some types of tachycardias are difficult to ablate.
 - MRI gives accurate anatomy and lesion visualization
- Goals
 - Develop technology for MR guided EP intervention
 - Test technology in laboratory and clinical studies
- Partnership (HL64795)
 - Johns Hopkins University
 - Robin Medical (Catheter tip location sensor)
 - Irvine Biomedical (Clinical grade catheters)
 - ANS Portland (Catheter tip protection)
 - NaviCath (Catheter manipulators)



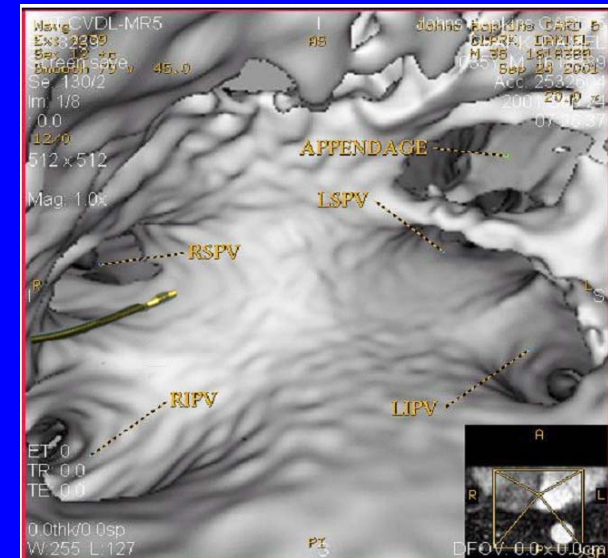
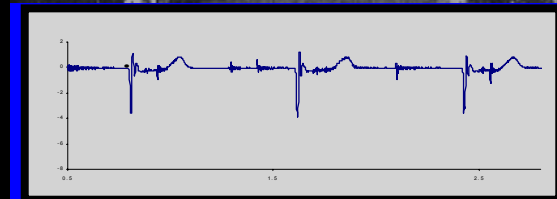
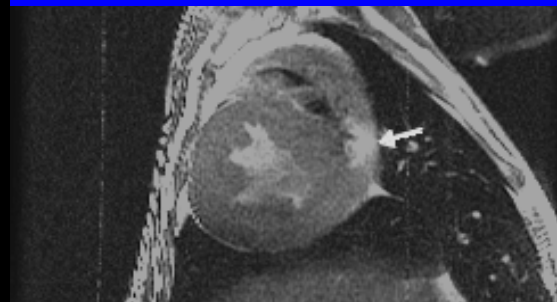
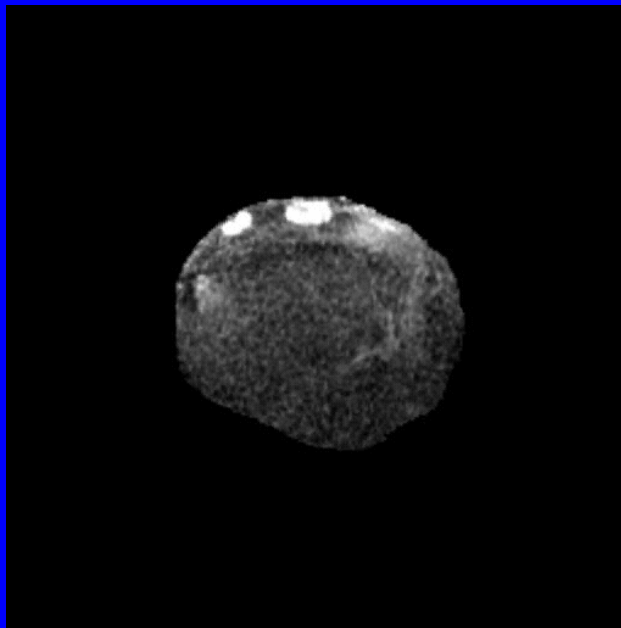
Catheter Tacking, Accurate Anatomy, and Imaging Ablated Tissue



Catheter Tracking



Ablation



The Near Future

Magnetic Resonance Guided Electrophysiology Intervention

- Accomplishments
 - Demonstration of feasibility of MR guided EP procedures
 - Development and IDE approval of clinical grade catheter system
 - 5 Young Investigator Awards/ 8 Patents/ 13 Manuscripts
 - Notice of intent to fund competing renewal
- Directions for the Future
 - Continued technology development – especially more user friendly
 - Study of determinants of successful ablation
 - Expand applications from atrial, to ventricular (life threatening) arrhythmias
 - Study of imaging predictors of sudden death, and appropriate intervention
- BRP has allowed development of critical technologies, especially through flexibility to modify program as needed.